IN THE CLAIMS:

The following is a complete listing of the claims, and replaces all earlier versions and listings.

Claim 1 (previously presented): Communication method for communicating on a network that includes communication devices, which perform communications in a connected mode or a non-connected mode, said method comprising:

- for at least one of the communication devices, which is to effect a transmission in the connected mode, an information operation during which the communication device broadcasts, on the network, an item of information representing a passband necessary for the transmission in the connected mode;

- a passband allocation operation of allocating the passband for connected-mode transmissions based on the item of information, wherein the passband allocation operation is performed in coordination with all communication devices using the information operation;

- a second allocation operation of allocating for non-connected-mode transmissions all or part of the passband not allocated for the connected-mode transmissions, for each communication device that is to effect a transmission in the non-connected mode, wherein the second allocation operation is performed independently from other communication devices in the network; and

- an adjustment operation of adjusting the allocated passband to avoid congestion on the network.

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Claim 2 (currently amended): Communication method according to Claim 1,

further comprising, for the establishment of a connection:

-          effected by a source communication device (801) intended to transmit

information on ~~the~~ a path, an operation of transmitting (305), ~~to each communication device~~

~~on the path, referred to as "intermediate" (803, 804),~~ an item of information (251) representing

the passband necessary for the connection to each intermediate communication device on the

path, and

-          effected by each intermediate communication device on the path, an

operation of determining an availability ~~(1402, 1404)~~ of a link leading to a following

communication device on the path and, ~~in an event of unavailability,~~ an operation of

transmitting ~~(333), to the source communication device,~~ an item of information representing

the unavailability of the path to the source communication device in an event of unavailability.

Claim 3 (previously presented): Communication method according to Claim

2, further comprising, for each transmission of information, a flow control operation

performed by each of the intermediate communication devices on the path followed by the

item of information.

Claim 4 (previously presented): Communication method according to Claim 3,

wherein the flow control operation performed by each intermediate communication device is

performed in accordance with an IEEE 1355 standard.

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Claim 5 (currently amended): Communication method according to Claim 1, further comprising:

- for each communication device in the network, following each information operation, an operation of determining a passband (1303, 1403, 1503) available on each link, taking into account the item of information, and

- for each source communication device that is to effect a transmission in the non-connected mode to a destination communication device:

• an operation of determining an availability of a path for a transmission in the non-connected mode, during which it is determined whether at least one path going from the source communication device to a destination communication device is at least partially available for the transmission, and

• if affirmative, an operation of transmitting on the path, in the non-connected mode.

Claim 6 (currently amended): Communication method according to Claim 1, further comprising an information transmission operation (254, 257, 259) that takes several priority levels into account.

Claim 7 (previously presented): Communication method according to Claim 6, wherein a priority level is allocated to a transmission in the non-connected mode.

Claim 8 (currently amended): Communication method according to Claim 6, wherein, during the passband allocation operation (1221), a passband associated with a priority

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level corresponding to the non-connected mode varies as a function of a period, which did not

give rise to any transmission.

Claim 9 (previously presented): Communication method according to Claim 8,

wherein the period is a period separating a last transmission in the non-connected mode and

a next transmission in the connected mode.

Claim 10 (currently amended): Communication method according to Claim 6,

wherein, during the passband allocation operation (1221), a passband associated with a priority

level corresponding to the non-connected mode varies as a function of a number of packets not

transmitted during a predetermined period.

Claim 11 (previously presented): Communication method according to

Claim 6, wherein predictive real-time traffic is transmitted with a priority level greater than

that of guaranteed real-time traffic.

Claim 12 (currently amended): Communication method according to Claim 6,

wherein each priority level is associated with a list of virtual channels (1105 to 1110),

successively used.

Claim 13 (canceled)

Claim 14 (currently amended): Communication method according to Claim 12, further comprising a traffic parameter determination operation (1221), during which a size of packets transmitted on the network is determined, wherein said traffic parameter determination operation takes into account , of determining a traffic parameter for a size of packets based on a load on the network.

Claim 15 (currently amended): Communication method according to Claim 12, further comprising a traffic parameter determination operation (1221), during which a number of packets to be sent on the network is determined, wherein said traffic parameter determination operation takes into account , of determining a traffic parameter for a number of packets based on a load on the network.

Claim 16 (currently amended): Communication method according to Claim 12, further comprising a traffic parameter determination operation (1221), during which a period available for sending packets remaining to be sent on the network is determined, wherein said traffic parameter determination operation takes into account , of determining a traffic parameter for a period available for sending packets based on a load on the network.

Claims 17-19 (canceled)

Claim 20 (currently amended): Communication method according to Claim 6, further comprising a control information transmission operation, during which of transmitting each item of control information is transmitted with in a highest priority level.

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Claim 21 (currently amended): Communication method according to Claim 6, wherein, ~~for at least one priority level,~~ information not transmitted during a predetermined ~~interval of~~ time is eliminated before transmission.

Claim 22 (currently amended): Communication method according to Claim 6, wherein, ~~for at least one priority level,~~ information not transmitted during a predetermined ~~interval of~~ time is stored in order to be transmitted ~~during a following time interval~~.

Claim 23 (previously presented): Communication method according to Claim 1, wherein real-time traffic, predictive or guaranteed, is transmitted in the connected mode.

Claim 24 (previously presented): Communication method according to Claim 1, wherein elastic traffic is transmitted in the non-connected mode.

Claim 25 (currently amended): Communication method according to Claim 1, further comprising, for each communication device ~~on a path intended to be followed in a transmission~~ in the connected mode, a checking operation ~~(1404), during which it is checked that~~ of checking the available passband ~~necessary for the transmission is available~~ on the path.

Claim 26 - 28 (canceled)

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Claim 29 (currently amended): Communication method according to Claim 1, further comprising, for establishing a connection:

A/ performed by a communication device that is a source of information to be transmitted in the connected mode:

- an operation of determining a passband requirement for transmission of the information in the connected mode,

- an operation of determining any path available for the transmission, according to information stored in a load table for each link in the network, ~~when an available path is determined:~~

     ° an operation of sending an item of information representing the passband requirement to a following communication device on the <u>available</u> path, and

     ° an operation of updating the load table for each link in the network, and

- an operation of broadcasting, ~~to at least all communication devices outside the path,~~ an item of information representing the passband requirement<u> to all communication devices outside the path,</u>

B/ performed by each intermediate communication device on the path:

- an operation of determining an availability of the path for a communication, according to information stored in a load table for each link in the network, and ~~when the path is available:~~

     ° an operation of sending an item of information representing the passband requirement to a following communication device on the <u>available</u> path, and

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•   an operation of updating [[a]] the load table for each link in the

network, and

C/ performed by each communication device outside the path:

-          an operation of updating a load table for each link in the network.

Claim 30 (currently amended): Communication method according to Claim 1,

between communication devices each able to determine, for each item of information to be

transmitted, a path for the information to follow, further comprising:

-          performed by each source communication device, which requires a

connection associated with a path, in order to effect a transmission of information to a

destination communication device, an operation of requesting [[a]] the connection, during

which the source communication device sends, to each communication device on the path, a

request to establish a connection in order to transmit information to a destination

communication device,

-          when establishment of the connection is possible, performed by at least

the destination communication device when establishment of the connection is possible, an

operation of sending, to the source communication device, a connection acceptance to the

source communication device,

-          performed by the source communication device, an operation of

broadcasting, to all communication devices in the network, an item of information

representing the establishment of the connection to all communicaiton devices in the network,

-          performed by each communication device on the path, on reception of

the information representing the establishment of the connection, an operation of confirmation

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of establishment of the connection <u>based on receptino of the informaiton representing the</u> <u>establishment of the connection,</u> and

- performed by each communication device outside the path, ~~on reception~~ ~~of the information representing the establishment of the connection,~~ an operation of storing an item of information representing the connection <u>based on reception of the information</u> <u>representing the establishment of the connection.</u>

Claim 31 (currently amended): Communication device ~~for communicating on~~ ~~a network that includes communication devices,~~ which perform<u>s</u> communications in a connected mode or a non-connected mode, said device comprising:

- information means, adapted~~, for transmission in the connected mode,~~ to <u>send</u> ~~broadcast, on the network,~~ an item of information representing a passband necessary for the transmission in the connected mode <u>on a network;</u>

- passband allocation means, adapted to allocate the passband necessary for the transmission in the connected mode, wherein said passband allocation means is adapted to allocate~~, to a transmission to be effected in the non-connected mode,~~ all or part of the passband not allocated for the connected mode <u>to a transmission in the non-connected mode,</u> independently from other communication devices ~~in the network;~~ and

- adjusting means, adapted to adjust the allocated passband to avoid congestion on the network.

Claims 32 - 70 (canceled)

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Claim 71 (currently amended):   Method of communicating between communication devices ~~(101 to 105, 801 to 809) in a packet switched network that includes at least one switch (209), comprising a transmission mode determination operation (1302), during which, for each item of information to be transmitted, a transmission mode is determined to be~~ in a connected mode or a non-connected mode in a packet switched network, and comprising

—————————•———~~for each item of information to be transmitted in the connected mode:~~

•   a reservation operation ~~(1304 to 1308, 301 to 313)~~ of reserving a path on the network to transmit information in the connected mode, and

•   a transmission operation of transmitting information ~~(314), in the connected mode,~~ on the path reserved ~~during~~ at said reservation operation, and

—————————•———~~for each item of information to be transmitted in the non-connected mode:~~

•   an availability estimation operation of estimating an availability of a path on the network to transmit information in the non-connected mode, and

•   ~~when a path is deemed to be available for transmission of information,~~ a transmission operation of transmitting information[[,]] on the path[[,]] in the non-connected mode when a path is deemed to be availabe for transmission of informaiton.

Claim 72 (currently amended): A method according to Claim 71, wherein said reservation operation includes an operation of transmitting ~~(305),~~ on the path[[,]] a message ~~(251)~~ including information representing an application requirement for transmission in the connected mode on the path.

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Claim 73 (currently amended): A method according to Claim 71, wherein said reservation operation includes a table updating operation of updating (1303, 1307, 1403, 1407, 1503, 1504) a load table (1100) stored by each communication device in the network.

Claim 74 (currently amended): A method according to Claim 73, wherein, during the availability estimation operation, values stored in a load table (1100) of a communication device that has at least one item of information to be transmitted are taken into account.

Claim 75 (currently amended): A method according to Claim 73, wherein the table updating operation includes an operation of determining parameters (1303, 1403, 1503) representing an application requirement for transmission in the connected mode.

Claim 76 (currently amended): A method according to Claim 73, wherein the table updating operation includes an operation of storing in memory a passband available for each link (1001 to 1004) on a path leaving a communication device under consideration (1011 to 1013).

Claim 77 (currently amended): A method according to Claim 73, wherein the table updating operation includes an operation of storing in memory a passband available for each link (1001 to 1007) in the network forming part of a path associated with a connection (1011 to 1015).

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Claim 78 (currently amended): A method according to Claim 71, wherein said

reservation operation includes an operation of checking (1404, 1405), by means of each

intermediate communication device (803, 804) on the path, an availability of a path to be

reserved.

Claim 79 (previously presented): A method according to Claim 71, wherein

the availability estimation operation includes determining whether at least one path is at least

partially available for transmission in the non-connected mode.

Claim 80 (previously presented): A method according to Claim 71, wherein,

during the availability estimation operation, information representing transmissions in the

connected mode is taken into account.

Claim 81 (previously presented): A method according to Claim 71, wherein

the availability estimation operation is independent of any transmissions in the non-connected

mode coming from other communication devices in the network.

Claim 82 (previously presented): A method according to Claim 71, wherein

the network uses a communication protocol according to an IEEE 1355 standard.

Claim 83 (currently amended): A method according to Claim 71, wherein said

reservation operation includes an operation of transmitting (305) a message (251) containing

information representing each link on the path to be reserved.

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Claim 84 (currently amended): A method according to Claim 71, wherein said reservation operation includes:

- an operation of broadcasting ~~(313)~~ a table updating message ~~(253)~~ destined for all communication devices in the network ~~(802 to 809)~~, and

- ~~for each communication device in the network not on the path to be reserved,~~ an operation of updating a load table <u>for each communicaiton device not on the path to be reserved</u> ~~(1504)~~.

Claim 85 (currently amended): A method according to Claim 71, further comprising, ~~for establishing a connection:~~

A/ performed by a communication device that is a source of information to be transmitted in the connected mode:

- an operation of determining a passband requirement for transmission of the information in the connected mode,

- an operation of determining any path available for the transmission, according to information stored in a load table for each link in the network,

~~when an available path is determined:~~

  ○ an operation of sending an item of information representing the passband requirement to a following communication device on the path, and

  ○ an operation of updating the load table for each link in the network, and

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- an operation of broadcasting, ~~all communication devices outside~~
~~the path, an item of~~ information representing the passband requirement <u>to all communicaiton</u>
<u>devices outside the path,</u> ~~and~~

B/ performed by each intermediate communication device on the path:

- an operation of determining an availability of the path for a
communication, according to information stored in a load table for each link in the network,
and

—————————————————— ~~when the path is available:~~

• an operation of sending ~~an item of~~ information
representing the passband requirement to a following communication device on the path, and

• an operation of updating the load table for each link in
the network, and

C/ performed by each communication device outside the path:

- an operation of updating a load table for each link in the
network.

Claim 86 (canceled)

Claim 87 (currently amended): Communication device for communicating on
a packet switched network that includes at least one switch ~~(209)~~, comprising:

- transmission mode determination means ~~(204A, 204B, 206A, 206B,~~
~~234, 236),~~ adapted to determine, ~~for each item of information to be transmitted,~~ a transmission
mode corresponding to a connected mode or a non-connected mode;

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- reservation means ~~(204A, 204B, 206A, 206B, 234, 236)~~, adapted, ~~for each item of information to be transmitted in the connected mode~~, to reserve a path on the network <u>for information to be transmitted in the connected mode</u>;

- path availability estimation means ~~(204A, 204B, 206A, 206B, 234, 236)~~, adapted, ~~for each item of information to be transmitted in the non-connected mode~~, to estimate an availability of at least one path <u>for information to be transmitted in the non-connected mode</u>; and

- transmissions means ~~(204A, 204B, 206A, 206B, 234, 236)~~, adapted to transmit, in the connected mode, ~~each item of~~ information to be transmitted in the connected mode on the path reserved by said reservation means, and to transmit, in the non-connected mode, on a path deemed to be available by said path availability estimation means, ~~each item~~ ~~of~~ information to be transmitted in the non-connected mode.

Claims 88 - 102 (canceled)

Claim 103 (previously presented): Computer, comprising a communication device according to Claim 87.

Claims 104-131 (canceled)

Claim 132 (currently amended): Communication device for communicating on a network, comprising:

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- a memory (204A) adapted to store a load table that includes information relating to a load on each link in the network; and

~~for establishing a connection intended for transmission of information in a connected mode.~~

- passband requirement determination means for determining a passband requirement for the transmission of the information in the connected mode,

- passband availability determination means for determining any path available for the transmission, ~~as a function of~~ based on information stored in [[a]] the load table,

- transmission means for~~, when an available path is determined,~~ transmitting ~~an item of~~ information representing the passband requirement to a following communication device on the path when an available path is determined,

- update means for updating the load table, and

- broadcast means for broadcasting~~, to communication devices outside the path, an item of~~ information representing the passband requirement to comunicaiton devices outside the path,

wherein said device is a source of information to be transmitted in the connected mode and is adapted to vary a size of data packets to be transmitted on the network based on a load on the path and a transmission rate of the packets on the path.

Claims 133 - 174 (canceled)

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Claim 175 (currently amended): Communication device for communicating on a network, comprising:

- transmission means, adapted to transmit, ~~to each communication device~~ -

~~on a path to a destination communication device, an item of~~ information requesting establishment of a connection to each communication device on a path to a destination communicaiton device; and

- broadcast means, adapted to broadcast, ~~to all communication devices~~

~~in the network, an item of~~ information on the establishment of the connection to all communicaiton devices in the network on reception of ~~an item of~~ information on an acceptance of a connection coming from the destination communication device,

wherein a communication device that is a source of information to be transmitted in a connected mode includes variation means for varying a size of data packets with a load on the path and a transmission rate of the packets on the path, in order to avoid congestion on the network.

Claim 176 (currently amended): Communication device according to Claim 175, wherein said communication device is adapted, ~~when said communication device~~ ~~is the destination communication device (802) for a request to establish a connection (251),~~ to determine whether establishment of a connection is possible when said communicaiton device is the destination comunicaiotn device for a request to establish a connection and, if a connection is possible, to cause said transmission means to transmit, ~~to the source~~ ~~communication device (801), an item of~~ information on an acceptance of the connection to thte source communicaiotn device ~~(252)~~.

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Claim 177 (currently amended): Communication device according to Claim 175, wherein said communication device is adapted, ~~when an item of information on the establishment of the connection (251) is received and when said communication device is situated on the path associated with the connection currently being established,~~ to confirm the establishment of the connection <u>when informaiton on the establishment of the conneciton is received and when said communication device is situated on the path associated with the connection currently being established</u>.

Claim 178 (currently amended): Communication device according to Claim 175, wherein said communication device is adapted, ~~when an item of information on the establishment of the connection (253) is received and when said communication device is not situated on the path associated with the connection currently being established,~~ to store in memory ~~an item of~~ information representing the connection <u>when information on the establishment of hte connection is received and when said ocmmunicaiton device is not situated on the path associated with the connection currently being established</u>.

Claim 179 (currently amended): Communication device according to Claim 175, wherein said communication device is adapted, ~~when said communication device is on a path associated with a connection currently being established (802 to 804),~~ to verify a possibility of establishing the connection ~~(1404),~~ on reception of the request to establish a connection <u>when said communication device is on a path associated with a connection currently being established</u>~~(251)~~.

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Claim 180 (currently amended): Communication device according to Claim 179, wherein, after having verified the possibility of establishing the connection (1404), said communication device (802 to 804) is adapted to reserve resources available to said communication device and which are necessary for the connection to said communicaiton device.

Claim 181 (currently amended): Communication device according to Claim 179, wherein said communication device is adapted, when the possibility of establishing the connection is not verified, to cause said transmission means to transmit, to the source communication device (801), an item of information representing an impossibility of setting up a connection by said communication device to the source communicatin device when the possibility of establihsing the ocnnection is not verified.

Claim 182 (currently amended): Communication device according to Claim 175, wherein, when establishment of the connection is possible, said communication device is adapted to cause said transmission means to transmit, to the source communication device (801), an item of information representing a connection acceptance (252) to the source communication device, solely when said communication device is a destination communication device (802).

Claim 183 (currently amended): Communication device according to Claim 182, wherein, in order to cause the item of information representing a connection acceptance (252) to be transmitted, the destination communication device (802) is adapted to

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choose a path independently of a path associated with the connection currently being established.

Claim 184 (currently amended):   Communication device according to Claim 175, further comprising a memory ~~(204A)~~ adapted to store a load table that includes information representing loads on links in the network incorporated in a path associated with a ~~connection;~~ connection, wherein said memory is adapted to update the load table.

Claim 185 (currently amended):   Communication device according to Claim 184, wherein said communication device is adapted~~, when said communication device is an intermediate (803, 804) communication device or a destination (802) communication device;~~ to update the load table on reception of the request to establish a connection when said communicaiton device is an intermediate commmunicaiotn device or a destination communicaiotn device~~(251)~~.

Claim 186 (currently amended):   Communication device according to Claim 185, wherein said communication device is adapted~~, when said communication device is situated outside the path associated with the connection currently being established;~~ to update the load table on reception of information representing establishment of a connection when said communication device is situated outside the path associated with the connection curently being established~~(253)~~.

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